

PATENT

008.1P) invented by Shlomo Rakib and Yehuda Azenkot, now U.S. patent 5,793,759, issued 8/11/98, which was a continuation-in-part application of U.S. patent application Serial No. 08/519,630, filed Aug. 25, 1995, (TER-002) invented by Shlomo Rakib and Yehuda Azenkot, now U.S. Patent No. 5,768,269, issued 6/16/98, the contents of all of which are hereby incorporated by reference. [~~This application is also a continuation in part application of a U.S. patent application entitled LOWER OVERHEAD METHOD FOR DATA TRANSMISSION USING ATM AND SCDMA OVER HYBRID FIBER COAX CABLE PLANT, Serial No. 08/760,412, filed December 4, 1996, invented by Amir Fuhrmann, Shlomo Rakib and Yehuda Azenkot, now co-pending, the entirety of which is hereby incorporated by reference. [This application is also a continuation in part application of a U.S. patent application entitled LOWER OVERHEAD METHOD FOR DATA TRANSMISSION USING ATM AND SCDMA OVER HYBRID FIBER COAX CABLE PLANT, Serial No. 08/760,412, filed December 4, 1996, invented by Amir Fuhrmann, Shlomo Rakib and Yehuda Azenkot, now co-pending, the entirety of which is hereby incorporated by reference.]~~]

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APPARATUS AND METHOD FOR SCDMA DIGITAL DATA TRANSMISSION USING
ORTHOGONAL CODES AND A HEAD END MODEM WITH NO TRACKING LOOPS

By
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Yehuda Azenkot

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TECHNOLOGICAL

This application is a divisional application of U.S. patent application Serial No. 08/895,612, filed 07/16/97 (Atty Docket TER-002.3P) entitled APPARATUS AND METHOD FOR SCDMA DIGITAL DATA TRANSMISSION USING ORTHOGONAL CODES AND HEAD END MODEM WITH NO TRACKING LOOPS (now allowed), which was a continuation-in-part application of U.S. patent application Serial No. 08/684,243, filed July 19, 1996, (TER-002.2P) invented by Shlomo Rakib and Yehuda Azenkot which was a continuation-in-part application of U.S. patent application Serial No. 08/588,650, filed January 19, 1996, (TER-008.1P) invented by Shlomo Rakib and Yehuda Azenkot, now U.S. patent 5,793,759, issued 8/11/98, which was a continuation-in-part application of U.S. patent application Serial No. 08/519,630, filed Aug. 25, 1995, (TER-002) invented by Shlomo Rakib and Yehuda Azenkot, now U.S. Patent No. 5,768,269, issued 6/16/98, the contents of all of which are hereby incorporated by reference.

20 **Background of The Invention**

The invention pertains to the field of bidirectional passband digital communication systems, and, more particularly to the field of improvements in head end or central office modems to remove the phase locked loops therefrom.

Digital data communication systems are well known in the art. Many treatises are available that describe them. Among these treatises are: Dixon, "Spread Spectrum Systems with Commercial Applications", Third Edition, 1994 (Wiley & Sons, New York) ISBN 0 471 59342-7; Stallings "Data and Computer Communications", 4th Ed. 1994 (Macmillan Publishing Co., New York) ISBN0-02-415441-5; Lee and Messerschmit,

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